



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Fang Dong *et al.*

Serial No.: 09/402,618

Group No.:

Filed: 10/21/99

Examiner:

Entitled: **Target-Dependent Reactions Using Structure-Bridging
Oligonucleotides**

**INFORMATION DISCLOSURE
STATEMENT TRANSMITTAL**

Assistant Commissioner for Patents
Washington, D.C. 20231

CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8(a)(1)(i)(A)	
I hereby certify that this correspondence (along with any referred to as being attached or enclosed) is, on the date shown below, being deposited with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231.	
Dated: <u>November 27, 2002</u>	By: <u>Mary Ellen Waite</u> Mary Ellen Waite


Sir or Madam:

Enclosed please find an Information Disclosure Statement and Form PTO-1449, including references, for filing in the U.S. Patent and Trademark Office.

A check for \$180.00 is also enclosed pursuant to 37 C.F.R. § 1.17(p) for filing this Information Disclosure Statement after three months as set forth in 37 C.F.R. § 1.97(c).

The Commissioner is hereby authorized to charge any additional fee or credit overpayment to our Deposit Account No. 08-1290. **An originally executed duplicate of this transmittal is enclosed for this purpose.**

Dated: November 27, 2002



David A. Casimir
Registration No. 42,395

12/03/2002 MDAMTE1 00000049 09402618

03 FC:1806

180.00 0P

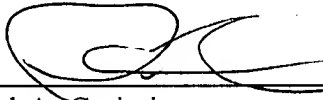
MEDLEN & CARROLL, LLP
101 Howard Street, Suite 350
San Francisco, California 94105
608/218-6900

In making the above disclaimer, petitioner does not disclaim the terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term as defined in 35 U.S.C. §§ 154 to 156 and 173, as presently shortened by any terminal disclaimer, in the event that Patent Nos. 6,194,149 or 6,355,437 should expire for failure to pay a maintenance fee, are held unenforceable, are found invalid by a court of competent jurisdiction, are statutorily disclaimed in whole or terminally disclaimed under 37 CFR § 1.321, have all claims cancelled by a reexamination certificate, are reissued, or are otherwise terminated prior to the expiration of their full statutory terms.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

The undersigned is empowered to act on behalf of the assignee.

Dated: November 27, 2002



David A. Casimir
Reg. No. 42,395

MEDLEN & CARROLL, LLP
101 Howard Street, Suite 350
(608) 218-6900



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Bruce Neri *et al.*

Serial No.: 09/402,618

Group No.: 1635

Filed: 07/18/00

Examiner: McGarry

Entitled: **TARGET-DEPENDENT REACTIONS USING
STRUCTURE-BRIDGING
OLIGONUCLEOTIDES**


INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

CERTIFICATE OF MAILING UNDER 37 CFR § 1.8(a)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the: Assistant Commissioner for Patents, Washington, D.C. 20231, on November 27, 2002.

By:


Mary Ellen Waite

Sir or Madam:

The citations listed below may be material to the examination of the above-identified application, and are therefore submitted in compliance with the duty of disclosure defined in 37 C.F.R. §§ 1.56 and 1.97. The Examiner is requested to make these citations of official record in this application.

The following printed publications are referred to in the body of the specification:

- U.S. Patent No. 5,422,253 to Dahlberg *et al.* [1995];
- U.S. Patent No. 5,427,930 to Birkenmeyer *et al.* [1995];
- U.S. Patent No. 5,429,807 to Matson *et al.* [1995];
- U.S. Patent No. 5,436,327 to Southern *et al.*;
- U.S. Patent No. 5,494,810 to Barany *et al.* [1996];
- U.S. Patent No. 5,599,695 to Pease *et al.* [1997];
- WO 95/15267 [1995];
- WO 97/27214 (Applicant would like to make the Examiner aware that pages 156-198 are missing from this publication and we have not been able to obtain them);
- WO 98/23774;
- WO 96/043741

- Abrams *et al.*, "Comprehensive Detection of Single Base Changes in Human Genomic DNA Using Denaturing Gradient Gel Electrophoresis and a GC Clamp," *Genomics* 7:463-475 [1990];
- Altamirano *et al.*, "Identification of Hepatitis C Virus Genotypes among Hospitalized Patients in British Columbia, Canada," *J. Infect. Dis.* 171:1034-1038 [1995];
- Bains and Smith, "A Novel Method for Nucleic Acid Sequence Determination," *J. Theor. Biol.* 135:303-307 [1988];
- Banerjee *et al.*, "*inhA*, a Gene Encoding a Target for Isoniazid and Ethionamide in *Mycobacterium tuberculosis*," *Science* 263:227-230 [1994];
- Barany, "The Ligase Chain Reaction in a PCR World," *PCR Meth. App.* 1:5-16 [1991];
- Barlow and Lehrach, "Genetics by gel electrophoresis: the impact of pulsed field gel electrophoresis on mammalian genetics," *Trends Genet.* 3:167-171 [1987];
- Bidou *et al.*, "In vivo HIV-1 frameshifting efficiency is directly related to the stability of the stem-loop stimulatory signal," *RNA* 3:1153-1158 [1997];
- Borresen *et al.*, "Constant denaturant gel electrophoresis as a rapid screening technique for p53 mutations," *Proc. Natl. Acad. Sci. USA* 88:8405-8409 [1991];
- Brow *et al.*, "Differentiation of Bacterial 16S rRNA Genes and Intergenic Regions and *Mycobacterium tuberculosis katG* Genes by Structure-Specific Endonuclease Cleavage," *J. Clin. Microbiol.* 34:3129-3137 [1996];
- Chee *et al.*, "Accessing Genetic Information with High-Density DNA Arrays," *Science* 274:610-614 [1996];
- Cload and Schepartz, "Polyether Tethered Oligonucleotide Probes," *J. Am. Chem. Soc.* 113:6324-6326 [1991];
- Cockerill, III *et al.*, "Rapid Identification of a Point Mutation of the *Mycobacterium tuberculosis* Catalase-Peroxidase (*katG*) Gene Associated with Isoniazid Resistance," *J. Infect. Dis.* 171:240-245 [1995];
- Compton in PCR Protocols, Innis *et al.* (Eds.), [1990], pp. 39-45;
- Conner, "Detection of sickle cell β^S -globin allele by hybridization with synthetic oligonucleotides," *Proc. Natl. Acad. Sci.* 80:278-282 [1983];
- Donnabella *et al.*, "Isolation of the Gene for the β Subunit of RNA Polymerase from Rifampicin-resistant *Mycobacterium tuberculosis* and Identification of New Mutations," *Am. J. Respir. Dis.* 11:639-643 [1994];
- Doty *et al.*, "Strand Separation and Specific Recombination in Deoxyribonucleic Acids: Physical Chemical Studies," *Proc. Natl. Acad. Sci. USA* 46:461 [1960];
- Drmanac *et al.*, "Sequencing of Megabase Plus DNA by Hybridization: Theory of the Method," *Genomics* 4:114-128 [1989];

- Duckett *et al.*, "The Structure of the Holliday Junction, and Its Resolution," *Cell* 55:79-89 [1988];
- Eckstein and Lilley (eds.), Nucleic Acids and Molecular Biology, vol. 2, Springer-Verlag, Heidelberg [1988];
- Fedorova *et al.*, "The Influence of the Target Structure on the Efficiency of Alkylation of Single-Stranded DNA with the Reactive Derivatives of Antisense Oligonucleotides," *FEBS Lett.* 302:47-50 [1992];
- Fodor *et al.*, "Light-Directed, Spatially Addressable Parallel Chemical Synthesis," *Science* 251:767-773 [1991];
- Fodor *et al.*, "Multiplexed biochemical assays with biological chips," *Nature* 364:555-556 [1993];
- Francois *et al.*, "Recognition and Cleavage of Hairpin Structures in Nucleic Acids by Oligodeoxynucleotides," *Nucleic Acids Research* 22(19):343-3950 [1994];
- Frieden *et al.*, "The Emergence of Drug-Resistant Tuberculosis in New York City," *New Engl. J. Med.* 328:521-526 [1993];
- Gamper *et al.*, "Solution Hybridization of Crosslinkable DNA Oligonucleotides to Bacteriophage M13 DNA Oligonucleotides to Bacteriophage M13 DNA: Effect of Secondary Structure on Hybridization Kinetics and Equilibria," *J. Mol. Biol.* 197:349-362 [1987];
- Gaspin and Westhof, "An Interactive Framework for RNA Secondary Structure Prediction with a Dynamical Treatment of Constrains," *J. Mol. Biol.* 254:163 [1995];
- Gesteland and Atkins (eds.), The RNA World, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY [1993], pp. 91 - , 137 - , 239 - ;
- Girelli *et al.*, "Hereditary Hyperferritinemia-Cataract Syndrome Caused by a 29-Base Pair Deletion in the Iron Responsive Element of Ferritin L-Subunit Gene," *Blood* 90:2084 [1997];
- Godard *et al.*, "Photochemically and Chemically Activatable Antisense Oligonucleotides: Comparison of Their Reactivities Towards DNA and RNA Targets," *Nuc. Acids Res.* 22:4789-4795 [1994];
- Gogos *et al.*, "Detection of single base mismatches of thymine and cytosine residues by potassium permanganate and hydroxylamine in the presence of tetralkylammonium salts," *Nucl. Acids Res.* 18:6807-6817 [1990];
- Hanke *et al.*, "Repetitive *Alu* Elements form a Cruciform Structure that Regulates the Function of the Human CD8 α T Cell-specific Enhancer," *J. Mol. Biol.* 246:63 [1995];
- Harrington and Lieber, "Functional domains within FEN-1 and RAD2 define a family of structure-specific endonucleases: implications for nucleotide excision repair," *Genes and Develop.* 3:1344-1355 [1994];

- Hayashi, "PCR-SSCP: A Simple and Sensitive Method for Detection of Mutations in the Genomic DNA," *PCR Meth. Appl.* 1:34-38 [1991];
- Heym *et al.*, "Implications of multidrug resistance for the future of short-course chemotherapy of tuberculosis: a molecular study," *Lancet* 344:293-298 [1994];
- Hirao *et al.*, "Most Compact Hairpin-Turn Structure Exerted by a Short DNA Fragment, d(GCGAAGC) in Solution: An Extraordinarily Stable Structure Resistant to Nucleases and Heat," *Nucleic Acids Res.* 22(4):576-582 [1994];
- Howe and Ares, "Intron self-complementarity enforces exon inclusion in a yeast pre-mRNA," *Proc. Natl. Acad. Sci. USA* 94:1246712472 [1997];
- Hughes, "The resurgence of tuberculosis," *Scrip Magazine*, pp. 46-48 [May 1994];
- Jacobs, Jr. *et al.*, "Rapid Assessment of Drug Susceptibilities of *Mycobacterium tuberculosis* by Means of Luciferase Reporter Phages," *Science* 260:819-822 [1993];
- Jacobs, Jr., "Multiple-Drug-Resistant Tuberculosis," *Clin. Infect. Dis.* 19:1-8 [1994];
- Jaeger *et al.*, "Improved predictions of secondary structures for RNA," *Proc. Natl. Acad. Sci. USA* 86:7706-7710 [1989];
- Jaeger *et al.*, "Predicting Optimal and Suboptimal Secondary Structure for RNA," *Meth. Enzymol.* 183:281-306 [1990];
- Kaczorowski and Szybalski, "Co-Operativity of hexamer ligation," *Gene* 179:189-193 [1996];
- Kanai *et al.*, "HCV genotypes in chronic hepatitis C and response to interferon," *Lancet* 339:1543 [1992];
- Kwok *et al.*, "Effects of Primer - Template Mismatches on the Polymerase Chain Reaction: Human Immunodeficiency Virus Type 1 Model Studies," *Nucl. Acids. Res.* 18:999-1005 [1990];
- Lerman and Silverstein, "Computational Simulation of DNA Melting and Its Application to Denaturing Gradient Gel Electrophoresis," *Meth. Enzymol.* 155:482-501 [1987];
- Lima *et al.*, "Implication of RNA Structure on Antisense Oligonucleotide Hybridization Kinetics," *Biochem.* 31:12055-12061 [1992];
- Liu and Sommer, "Parameters Affecting the Sensitivities of Dideoxy Fingerprinting and SSCP," *PCR Methods Appl.*, 4:97-108 [1994];
- Lowman and Draper, *J. Biol. Chem.*, 261:5396 [1986];
- Lyamichev *et al.*, "Structure-Specific Endonucleolytic Cleavage of Nucleic Acids by Eubacterial DNA Polymerase," *Science* 260: 778-7322 [1993];
- Mangada and Igarishi, "Sequences of Terminal Non-Coding Regions from Four Dengue-2 Viruses Isolated from Patients Exhibiting Different Disease Severities," *Virus Genes* 14:1:5-12 [1997];
- Marmur and Lane, "Strand Separation and Specific Recombination in Deoxyribonucleic Acids: Biological Studies," *Proc. Natl. Acad. Sci. USA* 46:453-461 [1960];

- Maskos and Southern, "Parallel analysis of oligodeoxyribonucleotide (oligonucleotide) interactions. I. Analysis of factors influencing oligonucleotide duplex formation," *Nucleic Acids Res* 20(7):1675-1678 [1992];
- Miller, *et al.*, "Multiple Biological Roles Associates with the Rous Sarcoma Virus 5' Untranslated RNA U5-IR Stem and Looe," *J Virol.*, 71:7648-765 [1997];
- Morris *et al.*, "Molecular Mechanisms of Multiple Drug Resistance in Clinical Isolates of *Mycobacterium tuberculosis*," *J. Infect. Dis.* 171:954-960 [1995];
- Murante, R.S., *et al.*, "The Calf 5'- to 3' Exonuclease Is Also an Endonuclease with Both Activities Dependent on Primers Annealed Upstream of the Point of Cleavage," *J. Biol. Chem.* 269:1191-1196 [1994];
- Myers *et al.*, "Reverse Transcription and DNA Amplification by a *Thermus thermophilus* DNA Polymerase," *Biochem.* 30:7661-7666 [1991];
- Myers *et al.*, "Detection of Single Base Substitutions by Ribonuclease Cleavage at Mismatches in RNA:DNA Duplexes," *Science* 230:1242-1246 [1985];
- Okamoto *et al.*, "Typing hepatitis C virus by polymerase chain reaction with type-specific primers: application to clinical surveys and tracing infectious sources," *J. Gen. Virol.* 73:673-679 [1992];
- Orita *et al.*, "Rapid and Sensitive Detection of Point Mutations and DNA Polymorphisms Using the Polymerase Chain Reaction," *Genomics* 5:874-879 [1989];
- Parkhurst and Parkhurst, "Kinetic Studies by Fluorescence Resonance Energy Transfer Employing a Double-Labeled Oligonucleotide: Hybridization to the Oligonucleotide Complement and to Single-Stranded DNA," *Biochem.* 34:285-292 [1995];
- Patel *et al.*, "Formation of Chimeric DNA Primer Extension Products by Template Switching Onto An Annealed Downstream Oligonucleotide," *Proc. Natl. Acad. Sci. USA* 93:2969-2974 [1996];
- Perlman and Butow, "Mobile Introns and Intron-Encoded Proteins," *Science* 246:1106-1109 [1989];
- Plikaytis *et al.*, *J. Clin. Microbiol.* 28:1913 (1990)
- Proutski *et al.*, "Secondary structure of the 3'-untranslated region of yellow fever virus: implications for virulence, attenuation and vaccine development," *J Gen Virol.*, 78:1543-1549 [1997];
- Richardson and Schepartz, "Tethered Oligonucleotide Probes. A Strategy for the Recognition of Structured RNA," *J. Am. Chem. Soc.* 113:5109-5111 [1991];
- Sambrook *et al.*, Molecular Cloning: A Laboratory Manual, 2nd ed. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY [1989];

- Scholz, *et al.*, "Rapid screening for Tp53 mutations by temperature gradient gel electrophoresis: a comparison with SSCP analysis," *Hum. Mol. Genet.* 2:2155-2158 [1993];
- Schwille *et al.*, "Quantitative Hybridization Kinetics of DNA Probes to RNA in Solution Followed by Diffusional Fluorescence Correlation Analysis," *Biochem.* 35:10182-10193 [1996];
- Serano and Cohen, "A Small Predicted Stem-Loop Structure Mediates Oocyte Localization of *Drosophila K10* mRNA," *Development* 121:3809-3818 [1995];
- Sheffield *et al.*, "Attachment of a 40-base-pair G+C-rich sequence (GC-clamp) to genomic DNA fragments by the polymerase chain reaction results in improved detection of single-base changes," *Proc. Natl. Acad. Sci.* 86:232-236 [1989];
- Shibata in PCR: The Polymerase Chain Reaction, "Preparation of Nucleic Acids for Archival Material," (eds., Mullis *et al.*) Boston, pp. 47-54 [1994];
- Shinnick and Jones in Tuberculosis: Pathogenesis, Protection and Control, "Molecular Approaches to the Diagnosis of Tuberculosis," (*ed.*, Bloom), American Society of Microbiology, Washington, D.C. [1994], pp. 517-530;
- Smith *et al.*, "Novel Method of Detecting Single Base Substitutions in RNA Molecules by Differential Melting Behavior in Solution," *Genomics* 3:217-223 [1988];
- Southern *et al.*, "Analyzing and Comparing Nucleic Acid Sequences by Hybridization to Arrays of Oligonucleotides: Evaluation Using Experimental Models," *Genomics* 13:1008-1017 [1992];
- Thompson *et al.*, "Microsatellite deletions in the c-myc transcriptional attenuator region associated with over-expression in colon tumour cell lines," *Oncogene* 14:1715 [1997];
- Veyrune *et al.*, "c-fos mRNA instability determinants present within both the coding and the 3' non coding region link the degradation of this mRNA to its translation," *Oncogene* 11:2127 [1995];
- Wallace *et al.*, "Hybridization of Synthetic Oligodeoxyribonucleotides to $\Phi\chi$ 174 DNA: The Effect of Single Base Pair Mismatch," *Nucl. Acids Res.* 6:3543-3557 [1979];
- Ward, *et al.*, "Changes in the NS Gene of Neurovirulent Strains of Influenza Affect Splicing," *Virus Genes* 10:1:91-94 [1995];
- Wartell *et al.*, "Detecting base pair substitutions in DNA fragments by temperature-gradient gel electrophoresis," *Nucl. Acids Res.* 18:2699-2701 [1990];
- Winter *et al.*, "A method to detect and characterize point mutations in transcribed genes: Amplification and overexpression of the mutant c-Ki-ras allele in human tumor cells," *Proc. Natl. Acad. Sci. USA* 82:7575-7579 [1985];
- Woese, "Bacterial Evolution," *Microbiological Reviews* 51(2):221-271 [1987];
- Yang and Millar, "Conformational Flexibility of Three-Way DNA Junctions Containing Unpaired Nucleotides," *Biochemistry* 35:7959-7967 [1996];

- Yoshioka *et al.*, "Detection of Hepatitis C Virus by Polymerase Chain Reaction and Response to Interferon- α Therapy: Relationship to Genotypes of Hepatitis C Virus," *Hepatology* 16:293-299 [1992];
- Youil, *et al.*, "Detection of 81 of 81 Known Mouse β -Globin Promotor Mutations with T4 Endonuclease VII - The EMC Method," *Genomics*, 32:431 [1996];
- Yule, "Amplification-Based Diagnostics Target TB," *Bio/Technology* 12:1335-1337 [1994];
- Zarrinkar and Williamson, "Kinetic Intermediates in RNA Folding," *Science* 265:918-924 [1994];
- Zarrinkar and Williamson, "The kinetic folding pathway of the *Tetrahymena* ribozyme reveals possible similarities between RNA and protein folding," *Nat. Struct. Biol.* 3:432-438 [1996];
- Zhong *et al.*, "Effect of T-T Base Mismatches on Three-Arm DNA Junctions," *Biochemistry* 32:6898-6907 [1993];
- Zucker, "On Finding All Suboptimal Foldings of an RNA Molecule," *Science* 244:48-52 [1989];
- Zuker and Jacobson, "'Well-Determined' Regions in RNA Secondary Structure Prediction: Analysis of Small Subunit Ribosomal RNA," *Nucleic Acids Research* 23(14):2791-2798 [1995].

The below printed publications were cited in the co-pending CIP U.S. Application Serial No. 09/034,205 filed 03/03/98.

- U.S. Patent No. 5,202,231 to Drmanac *et al.* [1993];
- U.S. Patent No. 5,492,806 to Drmanac *et al.* [1996];
- U.S. Patent No. 5,510,270 to Fodor *et al.* [1996];
- U.S. Patent No. 5,656,744 to Arnold, Jr., *et al.*, (1997);
- WO 96/04374 [1996] to Toulme *et al.*;
- Azhayeva *et al.*, "Looped Oligonucleotides Form Stable Hybrid Complexes with a Single-Stranded DNA," *Nucl. Acids Res.* 23(7):1170-1176 [1995];
- Blume *et al.*, "Divalent Transition Metal Cations Counteract Potassium-Induced Quadruplex Assembly of Oligo(dG) Sequences," *Nucl. Acids Res.* 25(3):617-625 [1997];
- Brossalina and Toulme, "A DNA Hairpin as a Target for Antisense Oligonucleotides," *J. Am. Chem. Soc.* 115:796-797 [1993];
- Butorin *et al.*, "Comparison of the Hydrolysis Patterns of Several tRNAs by Cobra Venom Ribonuclease in Different Steps of the Aminoacylation Reaction," *Eur. J. Biochem.* 121:587-595 [1982];
- Cech, "Structure and Mechanism of the Large Catalytic RNAs: Group I and Group II Introns and Ribonuclease P," Chapter 11 in The RNA World, Cold Spring Harbor Laboratory Press, New York, pp. 239-269 [1993];

- Clark, "DNA Synthesis on Discontinuous Templates by DNA Polymerase I of *Escherichia coli*," *Gene* 104:75-80 [1991];
- Cload *et al.*, "Kinetic and Thermodynamic Analysis of RNA Binding by Tethered Oligonucleotide Probes: Alternative Structures and Conformational Changes," *J. Am. Chem. Soc.* 115(12):5005-5014 [1993];
- Delihais *et al.*, "Natural Antisense RNA/Target RNA Interactions: Possible Models for Antisense Oligonucleotide Drug Design," *Nature Biotech.* 15:751-753 [1997];
- DeRisi *et al.*, "Use of a cDNA Microarray to Analyse Gene Expression Patterns in Human Cancer," *Nature Genetics* 14:457-460 [1996];
- Derrick and Horowitz, "Probing Structural Differences Between Native and *In Vitro* Transcribed *Escherichia coli* Valine Transfer RNA: Evidence For Stable Base Modification-Dependent Conformers," *Nucl. Acids Res.* 21(21):4948-4953 [1993];
- Frischer *et al.*, "Differential sensitivity of 16S rRNA targeted oligonucleotide probes used for fluorescence in situ hybridization is a result of ribosomal higher order structure," *Can. J. Microbiol* 42:1061-1071 [1996];
- Guo *et al.*, "Asymmetric Structure of a Three-Arm DNA Junction," *Biochemistry* 29:10927-10934 [1990];
- Hoheisel, "Sequence-independent and linear variation of oligonucleotide DNA binding stabilities," *Nucl. Acids Res.* 24(3):430-432 [1996];
- Lane *et al.*, "The Thermodynamic Advantage of DNA Oligonucleotide 'Stacking Hybridization' Reactions: Energetics of a DNA Nick," *Nucl. Acids Res.* 25(3):611-616 [1997];
- Lilley and Kemper, "Cruciform-Resolvase Interactions in Supercoiled DNA," *Cell* 36:413-422 [1984];
- Lima *et al.*, "Combinatorial Screening and Rational Optimization for Hybridization to Folded Hepatitis C Virus RNA of Oligonucleotides with Biological Antisense Activity," *J. Biol. Chem.* 272(1):626-638 [1997];
- Lu *et al.*, "Effect of Sequence on the Structure of Three-Arm DNA Junctions," *Biochemistry* 30(24):5815-5820 [1991];
- Ma *et al.*, "Three-Arm Nucleic Acid Junctions are Flexible," *Nucl. Acid Res.* 14:9745-9753 [1986];
- Malygin *et al.*, "Hybridization of Two Oligodeoxynucleotides to Both Strands of an RNA Hairpin Structure Increases the Efficiency of RNA-DNA Duplex Formation," *FEBS Letters* 392:114-116 [1996];
- Matveeva *et al.*, "A Rapid *In Vitro* Method for Obtaining RNA Accessibility Patterns for Complementary DNA Probes: Correlation with an Intracellular Pattern and Known RNA Structures," *Nucl. Acids Res.* 25(24):5010-5016 [1991];

- Milner *et al.*, "Selecting Effective Antisense Reagents On Combinatorial Oligonucleotide Arrays," *Nature Biotech.* 15:537-541 [1997];
- Milosavljevic *et al.*, "DNA Sequence Recognition by Hybridization to Short Oligomers: Experimental Verification of the Method on the *E. coli* Genome," *Genomics* 37:77-86 [1996];
- Mishra *et al.*, "Targeting nucleic acid secondary structures by antisense oligonucleotides designed through *in vitro* selection," *Proc. Natl. Acad. Sci. USA* 93:10679-10684 [1996];
- Pan *et al.*, "Divalent Metal Ions in RNA Folding and Catalysis," Chapter 12 in The RNA World, Cold Spring Harbor Laboratory Press, New York, pp. 271-302 [1993];
- Parinov *et al.*, "DNA Sequencing by Hybridization to Microchip Octa- and Decanucleotides Extended by Stacked Pentanucleotides," *Nucl. Acids Res.* 24(15):2998-3004 [1996];
- Parsch *et al.*, "Site-Directed Mutations Reveal Long-Range Compensatory Interactions in the *Adh* gene of *Drosophila melanogaster*," *Proc. Natl. Acad. Sci. USA* 94:928-933 [1997];
- Rosen and Patel, "Structural Features of a Three-Stranded DNA Junction Containing a C-C Junctional Bulge," *Biochemistry* 32:6576-6587 [1993];
- Schuster *et al.*, "RNA Structures and Folding: From Conventional to New Issues in Structure Predictions," *Cur. Opin. in Struct. Biol.* 7:229-235 [1997];
- Southern, "DNA fingerprinting by hybridization to oligonucleotide arrays," *Electrophoresis* 16(9):1539-1542 [1995];
- Southern, "DNA chips: analyzing sequence by hybridization to oligonucleotides on a large scale," *TIG* 12(3):1-6 [1996];
- Strobel and Doudna, "RNA Seeing Double: Close-Packing of Helices in RNA Tertiary Structure," *TIBS Reviews* 22:262-266 [1997];
- Suo and Johnson, "RNA Secondary Structure Switching During DNA Synthesis Catalyzed by HIV-1 Reverse Transcriptase," *Biochemistry* 36:14778-14785 [1997];
- Walter *et al.*, "Coaxial Stacking of Helices Enhances Binding of Oligoribonucleotides and Improves Predictions of RNA Folding," *Proc. Natl. Acad. Sci. USA* 91:9218-9222 [1994];
- Weiler *et al.*, "Hybridization Based DNA Screening on Peptide Nucleic Acid (PNA) Oligomer Arrays," *Nucl. Acids Res.* 25(14):2792-2799 [1997];
- Welch *et al.*, "Structures of Bulged Three-Way DNA Junctions," *Nucl. Acids Res.* 21(19):4548-4555 [1993];
- Woese and Pace, "Probing RNA Structure, Function, and History by Comparative Analysis," Chapter 4 in The RNA World, Cold Spring Harbor Laboratory Press, New York, pp. 91-117 [1993];
- Wyatt and Tinoco, "RNA Structural Elements and RNA Function," Chapter 18 in The RNA World, Cold Spring Harbor Laboratory Press, New York, pp. 465-496 [1993];

- Ho *et al.*, "Mapping of RNA accessible sites for antisense experiments with oligonucleotide libraries," *Nature Biotech* 16:59-63 (1998);
- Kirby *et al.*, "Maintenance of pre-mRNA secondary structure by epistatic selection," *Proc. Natl. Acad. Sci. USA* 92:9047-9051 (1995);
- Tabernero *et al.*, "The Posttranscriptional Control Element of the Simian Retrovirus Type 1 Forms an Extensive RNA Secondary Structure Necessary for Its Function," *J. Virol.* 70:5998-6011 (1996);
- Ladbury *et al.*, "The Thermodynamics of Formation of a Three-Strand, DNA Three-Way Junction Complex," *Biochemistry* 33:6828-6833 (1994);
- Leontis *et al.*, "Stability and structure of three-way DNA junctions containing unpaired nucleotides," *Nucl. Acids Res.* 19:759 766 (1991);
- Zhong *et al.*, "Thermodynamics of dT - dT Base Pair Mismatching in Linear DNA Duplexes and Three-Arm DNA Junctions," *Biochemistry* 36:2485 2491 (1997);
- Southern, "Detection of Specific Sequences Among DNA Fragments Separated by Gel Electrophoresis," *J. Mol. Biol.*, 98:503 (1975);

Co-pending applications:

- Serial Nos. 08/484,956, 08/520,946, 08/599,491, 08/682,853, 08/756,386, 08/759,038, and 08/823,516; the disclosures of these applications were incorporated by reference. Serial Nos. 08/851,588 and 08/934,097 which contain some shared disclosure in the specification with the present application.

Dated: November 27, 2002



David A. Casimir
Registration No. 42,395

MEDLEN & CARROLL, LLP
101 Howard Street, Suite 350
San Francisco, California 94105
608/218-6900

FORM PTO-1449
(Modified)U.S. Department of Commerce
Patent and Trademark Office

Attorney Docket No.: FORS-04012

Serial No.: 09/402,618

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Use Several Sheets If Necessary)Applicant: Fang Dong *et al.*

Filing Date: 07/18/00

Group Art Unit: 1635

(37 CFR § 1.98(b))

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	Serial / Patent Number	Issue Date	Applicant / Patentee	Class	Subclass	Filing Date
	1	5,422,253	06/06/95	Dahlberg <i>et al.</i>	435	91.53	12/07/92
	2	5,427,930	06/27/95	Birkenmeyer <i>et al.</i>	435	91.52	06/28/91
	3	5,429,807	07/04/95	Matson <i>et al.</i>	422	131	10/28/93
	4	5,436,327	07/25/95	Southern <i>et al.</i>	536	25.34	09/21/89
	5	5,494,810	02/27/96	Barany <i>et al.</i>	435	91.52	11/22/94
	6	5,599,695	02/04/97	Pease <i>et al.</i>	435	91.1	02/27/95
	7	5,202,231	04/13/93	Drmanac <i>et al.</i>	435	6	06/18/91
	8	5,492,806	02/20/96	Drmanac <i>et al.</i>	435	5	04/12/93
	9	5,510,270	04/23/96	Fodor <i>et al.</i>	436	518	09/30/92
	10	5,656,744	08/12/97	Arnold, Jr., <i>et al.</i>	536	25.3	07/07/95

FOREIGN PATENTS OR PUBLISHED FOREIGN PATENT APPLICATIONS

		Document Number	Publication Date	Country / Patent Office	Class	Subclass	Translation	
							Yes	No
	11	WO 95/15267	1995	PCT				
	12	WO 97/27214	1997	PCT				
	13	WO 98/23774	1998	PCT				
	14	WO 96/04374	1996	PCT				

OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)

15	Abrams <i>et al.</i> , "Comprehensive Detection of Single Base Changes in Human Genomic DNA Using Denaturing Gradient Gel Electrophoresis and a GC Clamp," <i>Genomics</i> 7:463-475 [1990]
16	Altamirano <i>et al.</i> , "Identification of Hepatitis C Virus Genotypes among Hospitalized Patients in British Columbia, Canada," <i>J. Infect. Dis.</i> 171:1034-1038 [1995]
17	Bains and Smith, "A Novel Method for Nucleic Acid Sequence Determination," <i>J. Theor. Biol.</i> 135:303-307 [1988]
18	Banerjee <i>et al.</i> , " <i>inhA</i> , a Gene Encoding a Target for Isoniazid and Ethionamide in <i>Mycobacterium tuberculosis</i> ," <i>Science</i> 263:227-230 [1994]
19	Barany, "The Ligase Chain Reaction in a PCR World," <i>PCR Meth. App.</i> 1:5-16 [1991]
20	Barlow and Lehrach, "Genetics by gel electrophoresis: the impact of pulsed field gel electrophoresis on mammalian genetics," <i>Trends Genet.</i> 3:167-171 [1987]
21	Bidou <i>et al.</i> , "In vivo HIV-1 frameshifting efficiency is directly related to the stability of the stem-loop stimulatory signal," <i>RNA</i> 3:1153-1158 [1997]
22	Borresen <i>et al.</i> , "Constant denaturant gel electrophoresis as a rapid screening technique for p53 mutations," <i>Proc. Natl. Acad. Sci. USA</i> 88:8405-8409 [1991]
23	Brow <i>et al.</i> , "Differentiation of Bacterial 16S rRNA Genes and Intergenic Regions and <i>Mycobacterium tuberculosis katG</i> Genes by Structure-Specific Endonuclease Cleavage," <i>J. Clin. Microbiol.</i> 34:3129-3137 [1996]
24	Chee <i>et al.</i> , "Accessing Genetic Information with High-Density DNA Arrays," <i>Science</i> 274:610-614 [1996]

Examiner:

Date Considered:

EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No.: FORS-04012	Serial No.: 09/402,618
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use Several Sheets If Necessary)		Applicant: Fang Dong <i>et al.</i>	
(37 CFR § 1.98(b))		Filing Date: 07/18/00	Group Art Unit: 1635
OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)			
	25	Cload and Schepartz, "Polyether Tethered Oligonucleotide Probes," <i>J. Am. Chem. Soc.</i> 113:6324-6326 [1991]	
	26	Cockerill, III <i>et al.</i> , "Rapid Identification of a Point Mutation of the <i>Mycobacterium tuberculosis</i> Catalase-Peroxidase (<i>katG</i>) Gene Associated with Isoniazid Resistance," <i>J. Infect. Dis.</i> 171:240-245 [1995]	
	27	Compton <i>in</i> PCR Protocols, Innis <i>et al.</i> (Eds.), [1990], pp. 39-45	
	28	Conner, "Detection of sickle cell β^S -globin allele by hybridization with synthetic oligonucleotides," <i>Proc. Natl. Acad. Sci.</i> 80:278-282 [1983]	
	29	Donnabella <i>et al.</i> , "Isolation of the Gene for the β Subunit of RNA Polymerase from Rifampicin-resistant <i>Mycobacterium tuberculosis</i> and Identification of New Mutations," <i>Am. J. Respir. Dis.</i> 11:639-643 [1994]	
	30	Doty <i>et al.</i> , "Strand Separation and Specific Recombination in Deoxyribonucleic Acids: Physical Chemical Studies," <i>Proc. Natl. Acad. Sci. USA</i> 46:461 [1960]	
	31	Drmanac <i>et al.</i> , "Sequencing of Megabase Plus DNA by Hybridization: Theory of the Method," <i>Genomics</i> 4:114-128 [1989]	
	32	Duckett <i>et al.</i> , "The Structure of the Holliday Junction, and Its Resolution," <i>Cell</i> 55:79-89 [1988]	
	33	Eckstein and Lilley (eds.), <i>Nucleic Acids and Molecular Biology</i> , vol. 2, Springer-Verlag, Heidelberg [1988]. (This publication is not provided but is available upon request of the Examiner).	
	34	Fedorova <i>et al.</i> , "The Influence of the Target Structure on the Efficiency of Alkylation of Single-Stranded DNA with the Reactive Derivatives of Antisense Oligonucleotides," <i>FEBS Lett.</i> 302:47-50 [1992]	
	35	Fodor <i>et al.</i> , "Light-Directed, Spatially Addressable Parallel Chemical Synthesis," <i>Science</i> 251:767-773 [1991]	
	36	Fodor <i>et al.</i> , "Multiplexed biochemical assays with biological chips," <i>Nature</i> 364:555-556 [1993]	
	37	Francois <i>et al.</i> , "Recognition and Cleavage of Hairpin Structures in Nucleic Acids by Oligodeoxynucleotides," <i>Nucleic Acids Research</i> 22(19):343-3950 [1994]	
	38	Frieden <i>et al.</i> , "The Emergence of Drug-Resistant Tuberculosis in New York City," <i>New Engl. J. Med.</i> 328:521-526 [1993]	
	39	Gamper <i>et al.</i> , "Solution Hybridization of Crosslinkable DNA Oligonucleotides to Bacteriophage M13 DNA Oligonucleotides to Bacteriophage M13 DNA: Effect of Secondary Structure on Hybridization Kinetics and Equilibria," <i>J. Mol. Biol.</i> 197:349-362 [1987]	
	40	Gaspin and Westhof, "An Interactive Framework for RNA Secondary Structure Prediction with a Dynamical Treatment of Constrains," <i>J. Mol. Biol.</i> 254:163 [1995]	
	41	Gesteland and Atkins (eds.), <i>The RNA World</i> , Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY [1993]. (This publication is not provided but is available upon request of the Examiner).	
	42	Girelli <i>et al.</i> , "Hereditary Hyperferritinemia-Cataract Syndrome Caused by a 29-Base Pair Deletion in the Iron Responsive Element of Ferritin L-Subunit Gene," <i>Blood</i> 90:2084 [1997]	
	43	Godard <i>et al.</i> , "Photochemically and Chemically Activatable Antisense Oligonucleotides: Comparison of Their Reactivities Towards DNA and RNA Targets," <i>Nuc. Acids Res.</i> 22:4789-4795 [1994]	
	44	Gogos <i>et al.</i> , "Detection of single base mismatches of thymine and cytosine residues by potassium permanganate and hydroxylamine in the presence of tetralkylammonium salts," <i>Nucl. Acids Res.</i> 18:6807-6817 [1990]	
	45	Hanke <i>et al.</i> , "Repetitive <i>Alu</i> Elements form a Cruciform Structure that Regulates the Function of the Human CD8 α T Cell-specific Enhancer," <i>J. Mol. Biol.</i> 246:63 [1995]	
	46	Harrington and Lieber, "Functional domains within FEN-1 and RAD2 define a family of structure-specific endonucleases: implications for nucleotide excision repair," <i>Genes and Develop.</i> 3:1344-1355 [1994]	
	47	Hayashi, "PCR-SSCP: A Simple and Sensitive Method for Detection of Mutations in the Genomic DNA," <i>PCR Meth. Appl.</i> 1:34-38 [1991]	
	48	Heym <i>et al.</i> , "Implications of multidrug resistance for the future of short0-course chemotherapy of tuberculosis: a molecular study," <i>Lancet</i> 344:293-298 [1994]	
	49	Hirao <i>et al.</i> , "Most Compact Hairpin-Turn Structure Exerted by a Short DNA Fragment, d(GCGAAGC) in Solution: An Extraordinarily Stable Structure Resistant to Nucleases and Heat," <i>Nucleic Acids Res.</i> 22(4):576-582 [1994]	
	50	Howe and Ares, "Intron self-complementarity enforces exon inclusion in a yeast pre-mRNA," <i>Proc. Natl. Acad. Sci. USA</i> 94:1246712472 [1997]	
Examiner:		Date Considered:	
EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

FORM PTO-1449 (Modified)		U.S. Department of Commerce Patent and Trademark Office		Attorney Docket No.: FORS-04012	Serial No.: 09/402,618
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use Several Sheets If Necessary)				Applicant: Fang Dong <i>et al.</i>	
				Filing Date: 07/18/00	Group Art Unit: 1635
(37 CFR § 1.98(b))					
OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)					
	51	Hughes, "The Resurgence of tuberculosis," <i>Scrip Magazine</i> , pp. 46-48 [May 1994]			
OIPE DEC 02 2002 U.S. PATENT TRADEMARK OFFICE	52	Jacobs, Jr. <i>et al.</i> , "Rapid Assessment of Drug Susceptibilities of <i>Mycobacterium tuberculosis</i> by Means of Luciferase Reporter Phages," <i>Science</i> 260:819-822 [1993]			
	53	Jacobs, Jr., "Multiple-Drug-Resistant Tuberculosis," <i>Clin. Infect. Dis.</i> 19:1-8 [1994]			
	54	Jaeger <i>et al.</i> , "Improved predictions of secondary structures for RNA," <i>Proc. Natl. Acad. Sci. USA</i> 86:7706-7710 [1989]			
	55	Jaeger <i>et al.</i> , "Predicting Optimal and Suboptimal Secondary Structure for RNA," <i>Meth. Enzymol.</i> 183:281-306 [1990]			
	56	Kaczorowski and Szybalski, "Co-Operativity of hexamer ligation," <i>Gene</i> 179:189-193 [1996]			
	57	Kanai <i>et al.</i> , "HCV genotypes in chronic hepatitis C and response to interferon," <i>Lancet</i> 339:1543 [1992]			
	58	Kwok <i>et al.</i> , "Effects of Primer - Template Mismatches on the Polymerase Chain Reaction: Human Immunodeficiency Virus Type 1 Model Studies," <i>Nucl. Acids. Res.</i> 18:999-1005 [1990]			
	59	Lerman and Silverstein, "Computational Simulation of DNA Melting and Its Application to Denaturing Gradient Gel Electrophoresis," <i>Meth. Enzymol.</i> 155:482-501 [1987]			
	60	Lima <i>et al.</i> , "Implication of RNA Structure on Antisense Oligonucleotide Hybridization Kinetics," <i>Biochem.</i> 31:12055-12061 [1992]			
	61	Liu and Sommer, "Parameters Affecting the Sensitivities of Dideoxy Fingerprinting and SSCP," <i>PCR Methods Appl.</i> , 4:97-108 [1994]			
	62	Lowman and Draper, "On the Recognition of Helical RNA by Cobra Venom V ₁ Nuclease," <i>J. Biol. Chem.</i> , 261:5396-5403 [1986]			
	63	Lyamichev <i>et al.</i> , "Structure-Specific Endonucleolytic Cleavage of Nucleic Acids by Eubacterial DNA Polymerase," <i>Science</i> 260: 778-7322 [1993]			
	64	Mangada and Igarishi, "Sequences of Terminal Non-Coding Regions from Four Dengue-2 Viruses Isolated from Patients Exhibiting Different Disease Severities," <i>Virus Genes</i> 14:1:5-12 [1997]			
	65	Marmur and Lane, "Strand Separation and Specific Recombination in Deoxyribonucleic Acids: Biological Studies," <i>Proc. Natl. Acad. Sci. USA</i> 46:453-461 [1960]			
	66	Maskos and Southern, "Parallel analysis of oligodeoxyribonucleotide (oligonucleotide) interactions. I. Analysis of factors influencing oligonucleotide duplex formation," <i>Nucleic Acids Res</i> 20(7):1675-1678 [1992]			
67	Miller, <i>et al.</i> , "Multiple Biological Roles Associates with the Rous Sarcoma Virus 5' Untranslated RNA U5-IR Stem and Looe," <i>J. Virol.</i> , 71:7648-765 [1997]				
68	Morris <i>et al.</i> , "Molecular Mechanisms of Multiple Drug Resistance in Clinical Isolates of <i>Mycobacterium tuberculosis</i> ," <i>J. Infect. Dis.</i> 171:954-960 [1995]				
69	Murante, R.S., <i>et al.</i> , "The Calf 5'- to 3'Exonuclease Is Also an Endonuclease with Both Activities Dependent on Primers Annealed Upstream of the Point of Cleavage," <i>J. Biol. Chem.</i> 269:1191-1196 [1994]				
70	Myers <i>et al.</i> , "Reverse Transcription and DNA Amplification by a <i>Thermus thermophilus</i> DNA Polymerase," <i>Biochem.</i> 30:7661-7666 [1991]				
71	Myers <i>et al.</i> , "Detection of Single Base Substitutions by Ribonuclease Cleavage at Mismatches in RNA:DNA Duplexes," <i>Science</i> 230:1242-1246 [1985]				
72	Okamoto <i>et al.</i> "Typing hepatitis C virus by polymerase chain reaction with type-specific primers: application to clinical surveys and tracing infectious sources," <i>J. Gen. Virol.</i> 73:673-679 [1992]				
73	Orita <i>et al.</i> , "Rapid and Sensitive Detection of Point Mutations and DNA Polymorphisms Using the Polymerase Chain Reaction," <i>Genomics</i> 5:874-879 [1989]				
74	Parkhurst and Parkhurst, "Kinetic Studies by Fluorescence Resonance Energy Transfer Employing a Double-Labeled Oligonucleotide: Hybridization to the Oligonucleotide Complement and to Single-Stranded DNA," <i>Biochem.</i> 34:285-292 [1995]				
75	Patel <i>et al.</i> , "Formation of Chimeric DNA Primer Extension Products by Template Switching Onto An Annealed Downstream Oligonucleotide," <i>Proc. Natl. Acad. Sci. USA</i> 93:2969-2974 [1996]				
Examiner			Date Considered:		
EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.					

FORM PTO-1449
(Modified)U.S. Department of Commerce
Patent and Trademark Office

Attorney Docket No.: FORS-04012

Serial No.: 09/402,618

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Use Several Sheets If Necessary)Applicant: Fang Dong *et al.*

(37 CFR § 1.98(b))

Filing Date: 07/18/00

Group Art Unit: 1635

OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)

- | | |
|----|---|
| 76 | Perlman and Butow, "Mobile Introns and Intron-Encoded Proteins," <i>Science</i> 246:1106-1109 [1989] |
| 77 | Proutski <i>et al.</i> , "Secondary structure of the 3'-untranslated region of yellow fever virus: implications for virulence, attenuation and vaccine development," <i>J Gen Virol.</i> , 78:1543-1549 [1997] |
| 78 | Richardson and Schepartz, "Tethered Oligonucleotide Probes. A Strategy for the Recognition of Structured RNA," <i>J. Am. Chem. Soc.</i> 113:5109-5111 [1991] |
| 79 | Sambrook <i>et al.</i> , <u>Molecular Cloning: A Laboratory Manual</u> , 2nd ed. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY [1989].
(This publication is not provided but is available upon request of the Examiner.) |
| 80 | Scholz, <i>et al.</i> , "Rapid screening for Tp53 mutations by temperature gradient gel electrophoresis: a comparison with SSCP analysis," <i>Hum. Mol. Genet.</i> 2:2155-2158 [1993] |
| 81 | Schwille <i>et al.</i> , "Quantitative Hybridization Kinetics of DNA Probes to RNA in Solution Followed by Diffusional Fluorescence Correlation Analysis," <i>Biochem.</i> 35:10182-10193 [1996] |
| 82 | Serano and Cohen, "A Small Predicted Stem-Loop Structure Mediates Oocyte Localization of <i>Drosophila K10</i> mRNA," <i>Development</i> 121:3809-3818 [1995] |
| 83 | Sheffield <i>et al.</i> , "Attachment of a 40-base-pair G+C-rich sequence (GC-clamp) to genomic DNA fragments by the polymerase chain reaction results in improved detection of single-base changes," <i>Proc. Natl. Acad. Sci.</i> 86:232-236 [1989] |
| 84 | Shibata <i>in</i> PCR: <u>The Polymerase Chain Reaction</u> , "Preparation of Nucleic Acids for Archival Material," (eds., Mullis <i>et al.</i>) Boston, pp. 47-54 [1994] |
| 85 | Shinnick and Jones <i>in</i> <u>Tuberculosis: Pathogenesis, Protection and Control</u> , "Molecular Approaches to the Diagnosis of Tuberculosis," (ed., Bloom), American Society of Microbiology, Washington, D.C. [1994], pp. 517-530 |
| 86 | Smith <i>et al.</i> , "Novel Method of Detecting Single Base Substitutions in RNA Molecules by Differential Melting Behavior in Solution," <i>Genomics</i> 3:217-223 [1988] |
| 87 | Southern <i>et al.</i> , "Analyzing and Comparing Nucleic Acid Sequences by Hybridization to Arrays of Oligonucleotides: Evaluation Using Experimental Models," <i>Genomics</i> 13:1008-1017 [1992] |
| 88 | Thompson <i>et al.</i> , "Microsatellite deletions in the c-myc transcriptional attenuator region associated with over-expression in colon tumour cell lines," <i>Oncogene</i> 14:1715 [1997] |
| 89 | Veyrune <i>et al.</i> , "c-fos mRNA instability determinants present within both the coding and the 3' non coding region link the degradation of this mRNA to its translation," <i>Oncogene</i> 11:2127 [1995] |
| 90 | Wallace <i>et al.</i> , "Hybridization of Synthetic Oligodeoxyribonucleotides to $\Phi\chi$ 174 DNA: The Effect of Single Base Pair Mismatch," <i>Nucl. Acids Res.</i> 6:3543-3557 [1979] |
| 91 | Ward, <i>et al.</i> , "Changes in the NS Gene of Neurovirulent Strains of Influenza Affect Splicing," <i>Virus Genes</i> 10:1:91-94 [1995] |
| 92 | Wartell <i>et al.</i> , "Detecting base pair substitutions in DNA fragments by temperature-gradient gel electrophoresis," <i>Nucl. Acids Res.</i> 18:2699-2701 [1990] |
| 93 | Winter <i>et al.</i> , "A method to detect and characterize point mutations in transcribed genes: Amplification and overexpression of the mutant c-Ki-ras allele in human tumor cells," <i>Proc. Natl. Acad. Sci. USA</i> 82:7575-7579 [1985] |
| 94 | Woese, "Bacterial Evolution," <i>Microbiological Reviews</i> 51(2):221-271 [1987] |
| 95 | Yang and Millar, "Conformational Flexibility of Three-Way DNA Junctions Containing Unpaired Nucleotides," <i>Biochemistry</i> 35:7959-7967 [1996] |
| 96 | Yoshioka <i>et al.</i> , "Detection of Hepatitis C Virus by Polymerase Chain Reaction and Response to Interferon- α Therapy: Relationship to Genotypes of Hepatitis C Virus," <i>Hepatology</i> 16:293-299 [1992] |
| 97 | Youil, <i>et al.</i> , "Detection of 81 of 81 Known Mouse β -Globin Promotor Mutations with T4 Endonuclease VII - The EMC Method," <i>Genomics</i> , 32:431 [1996] |
| 98 | Yule, "Amplification-Based Diagnostics Target TB," <i>Bio/Technology</i> 12:1335-1337 [1994] |

Examiner:

Date Considered:

EXAMINER:

Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449
(Modified)U.S. Department of Commerce
Patent and Trademark Office

Attorney Docket No.: FORS-04012

Serial No.: 09/402,618

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Use Several Sheets If Necessary)Applicant: Fang Dong *et al.*

(37 CFR § 1.98(b))

Filing Date: 07/18/00

Group Art Unit: 1635

OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)

99	Zarrinkar and Williamson, "Kinetic Intermediates in RNA Folding," <i>Science</i> 265:918-924 [1994]
100	Zarrinkar and Williamson, "The kinetic folding pathway of the <i>Tetrahymena</i> ribozyme reveals possible similarities between RNA and protein folding," <i>Nat. Struct. Biol.</i> 3:432-438 [1996]
101	Zhong <i>et al.</i> , "Effect of T-T Base Mismatches on Three-Arm DNA Junctions," <i>Biochemistry</i> 32:6898-6907 [1993]
102	Zucker, "On Finding All Suboptimal Foldings of an RNA Molecule," <i>Science</i> 244:48-52 [1989]
103	Zuker and Jacobson, "'Well-Determined' Regions in RNA Secondary Structure Prediction: Analysis of Small Subunit Ribosomal RNA," <i>Nucleic Acids Research</i> 23(14):2791-2798 [1995]
104	Azhayeva <i>et al.</i> , "Looped Oligonucleotides Form Stable Hybrid Complexes with a Single-Stranded DNA," <i>Nucl. Acids Res.</i> 23(7):1170-1176 [1995]
105	Blume <i>et al.</i> , "Divalent Transition Metal Cations Counteract Potassium-Induced Quadruplex Assembly of Oligo(dG) Sequences," <i>Nucl. Acids Res.</i> 25(3):617-625 [1997]
106	Brossalina and Toulme, "A DNA Hairpin as a Target for Antisense Oligonucleotides," <i>J. Am. Chem. Soc.</i> 115:796-797 [1993]
107	Butorin <i>et al.</i> , "Comparison of the Hydrolysis Patterns of Several tRNAs by Cobra Venom Ribonuclease in Different Steps of the Aminoacylation Reaction," <i>Eur. J. Biochem.</i> 121:587-595 [1982]
108	Cech, "Structure and Mechanism of the Large Catalytic RNAs: Group I and Group II Introns and Ribonuclease P," Chapter 11 in <i>The RNA World</i> , Cold Spring Harbor Laboratory Press, New York, pp. 239-269 [1993]
109	Clark, "DNA Synthesis on Discontinuous Templates by DNA Polymerase I of <i>Escherichia coli</i> ," <i>Gene</i> 104:75-80 [1991]
110	Clod <i>et al.</i> , "Kinetic and Thermodynamic Analysis of RNA Binding by Tethered Oligonucleotide Probes: Alternative Structures and Conformational Changes," <i>J. Am. Chem. Soc.</i> 115(12):5005-5014 [1993]
111	Delihias <i>et al.</i> , "Natural Antisense RNA/Target RNA Interactions: Possible Models for Antisense Oligonucleotide Drug Design," <i>Nature Biotech.</i> 15:751-753 [1997]
112	DeRisi <i>et al.</i> , "Use of a cDNA Microarray to Analyse Gene Expression Patterns in Human Cancer," <i>Nature Genetics</i> 14:457-460 [1996]
113	Derrick and Horowitz, "Probing Structural Differences Between Native and <i>In Vitro</i> Transcribed <i>Escherichia coli</i> Valine Transfer RNA: Evidence For Stable Base Modification-Dependent Conformers," <i>Nucl. Acids Res.</i> 21(21):4948-4953 [1993]
114	Frischer <i>et al.</i> , "Differential sensitivity of 16S rRNA targeted oligonucleotide probes used for fluorescence in situ hybridization is a result of ribosomal higher order structure," <i>Can. J. Microbiol.</i> 42:1061-1071 [1996]
115	Guo <i>et al.</i> , "Asymmetric Structure of a Three-Arm DNA Junction," <i>Biochemistry</i> 29:10927-10934 [1990]
116	Hoheisel, "Sequence-independent and linear variation of oligonucleotide DNA binding stabilities," <i>Nucl. Acids Res.</i> 24(3):430-432 [1996]
117	Lane <i>et al.</i> , "The Thermodynamic Advantage of DNA Oligonucleotide 'Stacking Hybridization' Reactions: Energetics of a DNA Nick," <i>Nucl. Acids Res.</i> 25(3):611-616 [1997]
118	Lilley and Kemper, "Cruciform-Resolvase Interactions in Supercoiled DNA," <i>Cell</i> 36:413-422 [1984]
119	Lima <i>et al.</i> , "Combinatorial Screening and Rational Optimization for Hybridization to Folded Hepatitis C Virus RNA of Oligonucleotides with Biological Antisense Activity," <i>J. Biol. Chem.</i> 272(1):626-638 [1997]
120	Lu <i>et al.</i> , "Effect of Sequence on the Structure of Three-Arm DNA Junctions," <i>Biochemistry</i> 30(24):5815-5820 [1991]
121	Ma <i>et al.</i> , "Three-Arm Nucleic Acid Junctions are Flexible," <i>Nucl. Acid Res.</i> 14:9745-9753 [1986]
122	Malygin <i>et al.</i> , "Hybridization of Two Oligodeoxynucleotides to Both Strands of an RNA Hairpin Structure Increases the Efficiency of RNA-DNA Duplex Formation," <i>FEBS Letters</i> 392:114-116 [1996]
123	Matveeva <i>et al.</i> , "A Rapid <i>In Vitro</i> Method for Obtaining RNA Accessibility Patterns for Complementary DNA Probes: Correlation with an Intracellular Pattern and Known RNA Structures," <i>Nucl. Acids Res.</i> 25(24):5010-5016 [1991]
124	Milner <i>et al.</i> , "Selecting Effective Antisense Reagents On Combinatorial Oligonucleotide Arrays," <i>Nature Biotech.</i> 15:537-541 [1997]

Examiner

Date Considered:

EXAMINER:

Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449
(Modified)U.S. Department of Commerce
Patent and Trademark Office

Attorney Docket No.: FORS-04012

Serial No.: 09/402,618

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Use Several Sheets If Necessary)Applicant: Fang Dong *et al.*

(37 CFR § 1.98(b))

Filing Date: 07/18/00

Group Art Unit: 1635

OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)

- | | |
|-----|---|
| 125 | Milosavljevic <i>et al.</i> , "DNA Sequence Recognition by Hybridization to Short Oligomers: Experimental Verification of the Method on the <i>E. coli</i> Genome," <i>Genomics</i> 37:77-86 [1996] |
| 126 | Mishra <i>et al.</i> , "Targeting nucleic acid secondary structures by antisense oligonucleotides designed through <i>in vitro</i> selection," <i>Proc. Natl. Acad. Sci. USA</i> 93:10679-10684 [1996] |
| 127 | Pan <i>et al.</i> , "Divalent Metal Ions in RNA Folding and Catalysis," Chapter 12 in <i>The RNA World</i> , Cold Spring Harbor Laboratory Press, New York, pp. 271-302 [1993] |
| 128 | Parinov <i>et al.</i> , "DNA Sequencing by Hybridization to Microchip Octa- and Decanucleotides Extended by Stacked Pentanucleotides," <i>Nucl. Acids Res.</i> 24(15):2998-3004 [1996] |
| 129 | Parsch <i>et al.</i> , "Site-Directed Mutations Reveal Long-Range Compensatory Interactions in the <i>Adh</i> gene of <i>Drosophila melanogaster</i> ," <i>Proc. Natl. Acad. Sci. USA</i> 94:928-933 [1997] |
| 130 | Rosen and Patel, "Structural Features of a Three-Stranded DNA Junction Containing a C-C Junctional Bulge," <i>Biochemistry</i> 32:6576-6587 [1993] |
| 131 | Schuster <i>et al.</i> , "RNA Structures and Folding: From Conventional to New Issues in Structure Predictions," <i>Cur. Opin. in Struct. Biol.</i> 7:229-235 [1997] |
| 132 | Southern, "DNA fingerprinting by hybridization to oligonucleotide arrays," <i>Electrophoresis</i> 16(9):1539-1542 [1995] |
| 133 | Southern, "DNA chips: analyzing sequence by hybridization to oligonucleotides on a large scale," <i>TIG</i> 12(3):1-6 [1996] |
| 134 | Strobel and Doudna, "RNA Seeing Double: Close-Packing of Helices in RNA Tertiary Structure," <i>TIBS Reviews</i> 22:262-266 [1997] |
| 135 | Suo and Johnson, "RNA Secondary Structure Switching During DNA Synthesis Catalyzed by HIV-1 Reverse Transcriptase," <i>Biochemistry</i> 36:14778-14785 [1997] |
| 136 | Walter <i>et al.</i> , "Coaxial Stacking of Helices Enhances Binding of Oligoribonucleotides and Improves Predictions of RNA Folding," <i>Proc. Natl. Acad. Sci. USA</i> 91:9218-9222 [1994] |
| 137 | Weiler <i>et al.</i> , "Hybridization Based DNA Screening on Peptide Nucleic Acid (PNA) Oligomer Arrays," <i>Nucl. Acids Res.</i> 25(14):2792-2799 [1997] |
| 138 | Welch <i>et al.</i> , "Structures of Bulged Three-Way DNA Junctions," <i>Nucl. Acids Res.</i> 21(19):4548-4555 [1993] |
| 139 | Woese and Pace, "Probing RNA Structure, Function, and History by Comparative Analysis," Chapter 4 in <i>The RNA World</i> , Cold Spring Harbor Laboratory Press, New York, pp. 91-117 [1993] |
| 140 | Wyatt and Tinoco, "RNA Structural Elements and RNA Function," Chapter 18 in <i>The RNA World</i> , Cold Spring Harbor Laboratory Press, New York, pp. 465-496 [1993] |
| 141 | Ho <i>et al.</i> , "Mapping of RNA accessible sites for antisense experiments with oligonucleotide libraries," <i>Nature Biotech</i> 16:59-63 [1998] |
| 142 | Kirby <i>et al.</i> , "Maintenance of pre-mRNA secondary structure by epistatic selection," <i>Proc. Natl. Acad. Sci. USA</i> 92:9047-9051 [1995] |
| 143 | Tabernero <i>et al.</i> , "The Posttranscriptional Control Element of the Simian Retrovirus Type 1 Forms an Extensive RNA Secondary Structure Necessary for Its Function," <i>J. Virol.</i> 70:5998-6011 [1996] |
| 144 | Ladbury <i>et al.</i> , "The Thermodynamics of Formation of a Three-Strand, DNA Three-Way Junction Complex," <i>Biochemistry</i> 33:6828-6833 [1994] |
| 145 | Leontis <i>et al.</i> , "Stability and structure of three-way DNA junctions containing unpaired nucleotides," <i>Nucl. Acids Res.</i> 19:759-766 [1991] |
| 146 | Zhong <i>et al.</i> , "Thermodynamics of dT - dT Base Pair Mismatching in Linear DNA Duplexes and Three-Arm DNA Junctions," <i>Biochemistry</i> 36:2485-2491 [1997] |
| 147 | Plikaytis <i>et al.</i> , <i>J. Clin. Microbiol.</i> 28:1913 (1990) |
| 148 | Southern, "Detection of Specific Sequences Among DNA Fragments Separated by Gel Electrophoresis," <i>J. Mol. Biol.</i> 98:503-517 [1975] |

Examiner:

Date Considered:

EXAMINER:

Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.